PDB5

ECONOMIC IMPACT OF IMPROVING THE ACCURACY OF BLOOD GLUCOSE SELF-MONITORING ON THE SPANISH HEALTH SERVICE

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OBJECTIVES: The 15197:2003 ISO states that 95% of the glucose results shall fall within ±15 mg/dl of the concentrations ≤75 mg/dl and ±20% at those >75 mg/dl. The objective was to estimate the 1-year economic impact for the Spanish Health System of blood glucose self-monitoring by using glucose meters with different degrees of accuracy **METHODS:** A probabilistic model was designed to estimate the clinical and economic outcomes of a type 2 (T2D) or type 1 diabetes (T1D) cohort. A second-order Monte Carlo simulation was run, in order to estimate the frequency of non-detected hypoglycemia and hyperglycemia cases. The frequency of macro and microvascular events, associated with the non-detected readings, was calculated. Finally, the economic impact was assessed for better accuracy levels (±15; ±5%) **RESULTS:** We estimated a total prevalence of 96,169 type 1 and 3,115,866 type 2 treated diabetic patients in Spain. We included all the T1D patients and those insulin dependents T2D (23.4%). The average annual cost of associated events and those of monitoring blood glucose were estimated at 95,987,193 € for T2D and 11,501,292 € for T1D with a ±20% accuracy. When an accuracy of ±15% was analyzed, the annual costs for T2D were reduced to 88,349,485 € and to 9,180,317 € for T1D, showing a total saving of 9,958,682 € a year. If the accuracy rose up to ±5%, the results were 80,067,179 € in T2D and 6,084,776 € in T1D, for a total saving of 21,336.530 € a year. The total costs reduced by 9.3%, 15.4% and 19.9% with accuracy of ±15%, ±10% and ±5%, respectively, respect of the initial ±20% **CONCLUSIONS:** This study shows that if the accuracy of the glucose meters raises, several macrovascular and microvascular events and hypoglycemic episodes could be avoided. That can improve patients' quality of life and reduce significantly the associated costs

PDB6

BASELINE CHARACTERISTICS, WEIGHT AND GLYCAEMIC CHANGE AMONG PATIENTS IN THE UNITED KINGDOM WITH TYPE 2 DIABETES MELLITUS (T2DM) PRESCRIBED A NEW ANTIDIABETIC TREATMENT CLASS IN A REAL WORLD SETTING

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OBJECTIVES: Patients with T2DM have an increased risk of comorbidities associated with weight gain. Depending on patients' weight, treatment guidelines give preference to treatments that have favourable weight profiles, with weight gain being an important adverse event to avoid. This study aims to characterize baseline characteristics, weight and glycaemic change in patients prescribed new antidiabetic treatment. **METHODS:** Patients with T2DM diagnosis and receiving first new antidiabetic treatment class (index) between 01/01/05-01/01/12 were identified in UK CPRD primary care records. Index class could be first-line, switch or add-on. Demographics, baseline weight and glycosylated haemoglobin (HbA1c), and change at 6 months were described by index class. **RESULTS:** Of 23,987 included (of whom 133 were lost to follow-up) 64.7% initiated metformin (MET), 15.5% sulfonylureas (SU), (14.0%) thiazolidinediones (TZD), 2.1% dipeptidyl-peptidase-4-inhibitors (DPP4), 1.9% insulin, 0.7% glucagon-like-peptide-1-agonists (GLP-1), 0.6% 'other', 0.5% acarbose. About 57% were men; baseline mean age for different index classes ranged between 56.5 (insulin) and 63.1 years (acarbose). Mean baseline weight ranged between 88.0 (SU) and 112.4 kg (GLP-1) and mean baseline HbA1c between 72.6 mmol/mol (8.8%) (acarbose) and 84.7 mmol/mol (9.9%) (insulin). Among 14,438 patients with six-month follow-up data an increase in weight was found for subjects initiating SU (2.1%;95%CI: 1.9;2.4,n=2,223), TZD (1.9%;95%CI: 1.7;2.1,n=2,034) and insulin (1.8% ;95%CI: 1.0;2.6,n=285). A reduction in weight was observed for patients on GLP-1 (-3.4%;95%CI: -4.3;-2.5,n=119), DPP4 (-0.9%;95%CI: -1.4;-0.4,n=347) and MET (-0.8%;95%CI: -0.9;-0.7,n=9,278). A mean reduction in HbA1c over the six month period was seen for all antidiabetic classes but was not statistical significant for GLP-1 and 'other'. **CONCLUSIONS:** These results indicate that initiation of antidiabetic agents such as SU, TZD and insulin frequently are associated with weight gain. This underscores the need to choose agents with favourable weight profiles for overweight or obese patients, as recommended by UK T2DM treatment guidelines.

PDB7

GLYCEMIC, LIPID, AND BLOOD PRESSURE CONTROL AMONG TYPE 2 DIABETES MELLITUS PATIENTS IN DUBAI

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OBJECTIVES: Inadequate glycemic, blood pressure (BP), and lipid control among type 2 diabetes mellitus (T2DM) patients is associated with increased risk of T2DM-related complications. Few data on these outcomes are available from the United Arab Emirates (UAE). The objective was to estimate the proportion of T2DM patients with glycemic, lipid, and BP control at a large centre in Dubai. **METHODS:** Charts from T2DM patients aged ≥18 years that visited the Dubai Hospital from October 2009 to March 2010 (enrolment period) were systematically sampled until the target (n=250) was reached. Results of haemoglobin A1c (HbA1c), low-density lipoprotein (LDL), and BP tests conducted from enrolment to September 2011 were abstracted from patient charts. The most recent test values were compared to guideline targets. The proportion of well-controlled (target met on all tests) and never-controlled patients (target not met on any test) over the study period was calculated. All analyses were stratified by T2DM duration. **RESULTS:** Thirty-three percent of the sample was male, and at enrolment, the mean (SD) age was 58 years (12), and T2DM duration, 14 years (8). At the most recent assessment, 58 patients (23%) had HbA1c <7%, 68 (27%) had HbA1c ≥9%, and 173 (71%) had LDL <100mg/dL. Although 74 patients (29%) met BP targets (<130/80mmHg), 50% had BP ≥140/90mmHg. HbA1c, LDL and BP were well-controlled in approximately 7.2%, 41.2%, and 8.6% of patients, respectively, while 59.2%, 7.8% and 21.3% of patients were never-controlled, respectively. The proportion of patients who were never-controlled for HbA1c increased with T2DM duration. **CONCLUSIONS:** Nearly 75% of patients met targets and over 40% were well-controlled for LDL; however, rates of control for HbA1c and BP were lower. Given the increased risk of complications associated with poor control, achieving higher rates of control could reduce the burden of T2DM in the UAE.

PDB8

A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS OF SECOND-LINE ANTI-DIABETES TREATMENTS FOR THOSE WITH TYPE 2 DIABETES MELLITUS INADEQUATELY CONTROLLED BY SULFONYLUREA MONOTHERAPY

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OBJECTIVES: To assess the efficacy and safety of EU-licensed anti-diabetes agents when added to sulfonylurea (SU). **METHODS:** A systematic review was conducted in MEDLINE, EMBASE and CENTRAL to identify randomised controlled trials in patients with type 2 diabetes mellitus inadequately controlled by a stable dose of SU monotherapy. Direct meta-analysis, Bucher indirect comparisons and Bayesian network meta-analysis (NMA) using WinBUGs were conducted. The effect of potentially confounding baseline factors was explored through covariate analyses. **RESULTS:** The search identified 2,976 articles of which 2,945 were excluded based on title/abstract. On reviewing remaining full-text articles, 5 studies were selected for analysis at 24 (+/- 6) weeks follow-up. All studies were comparable in terms of baseline characteristics, including: HbA1c, age and BMI. Three classes of agents had sufficient data for meta-analysis: DPP4 inhibitors ('DPP4s'), GLP1 analogues ('GLP1s') and SGLT2 inhibitors ('SGLT2s'; only dapagliflozin has an EU licence in this class). Based on the fixed-effect NMA, all three classes of treatment resulted in statistically significantly lower HbA1c at follow-up compared to placebo (based on the 95% credible interval [CrI]). SGLT2 treatment resulted in significantly lower weight at follow-up compared to placebo (–1.54 kg; 95% CrI –2.16, –0.92), which is in contrast to treatment with GLP1s (-0.65kg; 95% CrI -1.37, 0.07) and DPP4s (0.57 kg; 95% CrI 0.09, 1.06). The odds of hypoglycaemia for SGLT2 and DPP4 add-on treatment were similar to placebo, but significantly greater than placebo for GLP1 add-on treatment (10.89; 95% CrI 4.24, 38.28). Assessment of NMA model heterogeneity was hindered by the low number of studies within the network. **CONCLUSIONS:** All three classes of treatments used as add-on therapy to SU provided better short-term glycaemic control compared to SU monotherapy. However, DPP4s, GLP1s and SGLT2s may show variation in terms of impact on weight and incidence of hypoglycaemia.

PDB9

REAL LIFE EFFECTS OF LIRAGLUTIDE SUPPORTS THOSE SHOWN IN RCTS

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OBJECTIVES: In RCTs performed in patients with T2DM liraglutide reduced HbA1c by 1.0-1.5%-point and weight up to 3.7kg. Patients had disease duration of 7.7 years on average, baseline HbA1c of 8.4%. We assessed the effectiveness of liraglutide prescribed per guidelines in the analyzed cohort. **METHODS:** Patients from an Israeli HMO (Maccabi) treated with liraglutide ≥6 months during 2010-2012 were included. Prescription rules were BMI>30; HbA1c>8.0% after use of 2 oral hypoglycemic agents. Data was extracted from electronic records included in a registry of >90,000 diabetes patients. Assessments were performed within 180 days before the date of first prescription and at 6 months +/- 90 days. **RESULTS:** A total of 462 insulin naïve patients treated with liraglutide were identified. 52% males; age was 61.0 years (SD 8.67); diabetes duration was 10.5 years (SD 3.53). HbA1c decreased by 0.93%-points (SD 1.17) (p<0.0001 95% CI 0.82-1.03), down from 8.6% (SD 1.20). Mean time between HbA1c measurements was 222 days (SD 52.39). In 170 patients with available data, weight decreased by 2.5kg (SD 5.09) (p<0.0001 95% CI 1.71-3.2) from 99.9kg (18.17). Time between measurements of weight was 202 days (SD 63.2). Diabetes duration, HbA1c levels and change of the group with weight data were similar to the main cohort. 202 patients (43.7%) achieved ≥1%-point HbA1c reduction. In 31.2% (48 of 170), the reduction was without weight gain. 26 (16.9%) achieved the NICE criteria (decrease of HbA1c≥1% and weight≥3%). Baseline HbA1c and amount of liraglutide prescribed correlated with the degree of HbA1c reduction. **CONCLUSIONS:** Real life use of liraglutide significantly reduced HbA1c and weight, showing similar outcomes as those observed in RCTs. Compared to the RCTs patients in this cohort had more severe diabetes and were more obese, yet liraglutide retained its effects.

PDB10

A BAYESIAN MULTIPLE TREATMENT COMPARISON OF DULOXETINE, PREGABALIN, GABAPENTIN, AMITRIPTYLINE, AND THEIR COMBINATIONS FOR PAINFUL PERIPHERAL NEUROPATHY BASED ON PAIN REDUCTION REPORTED IN CLINICAL TRAILS

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OBJECTIVES: To compare the performance of treatment of painful diabetic peripheral neuropathy (PDPN) — duloxetine, pregabalin, gabapentin, amitriptyline, and their combinations based upon pain reduction reported in clinical trials, and inform a revised treatment algorithm. **METHODS:** Published studies of PDPN treatment through May 2012 were identified from MEDLINE(PubMed) database and extended manual search was conducted based on citations from identified studies. Inclusion criteria was restricted to randomized controlled trials lasting at least 5 weeks and at most 12 weeks and studies examining 30% pain reduction or equivalent. Direct and